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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,598	02/24/2004	Junwon Lee	87163AEK	3196

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EXAMINER	
CHOI, JACOB Y	

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/785,598	LEE ET AL.
	Examiner	Art Unit
	Jacob Y. Choi	2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 September 2005*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-8,11-18 and 20-46* is/are pending in the application.

4a) Of the above claim(s) *20-31,35,36,38,39,45 and 46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-8,11-18,32-34,37,40-42 and 44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claims 1, 3, 7, 8, 12-18, 32-34, 37, 40 & 41 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 5, 11, 12, 17, 18, 20, 23, 32, 37 & 39-41 of copending Application No. 10/860,545.

Application No. 10/785,598 (claim #)	Application No. 10/860,545
1	1, 12, 20, 32
3	18
7	2
8	1, 12, 20, 32
12	20
13	5

14	17
15	23
16	20
17	1, 20, 32
18	12
32	1, 20, 32
33	20
34	11
37	1, 20, 32
40	37
41	39-41

Although the conflicting claims are not identical, they are not patentably distinct from each other because one of ordinary skill in the art at the time the invention was made would have recognized that the wordings/terms of "tapered structures" are equivalent with terms of "collecting structures" or "ribbed surfaces" while, claims in the pending application should be given their broadest reasonable interpretation. *In re Pearson*, 181 USPQ 641 (CCPA 1974).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

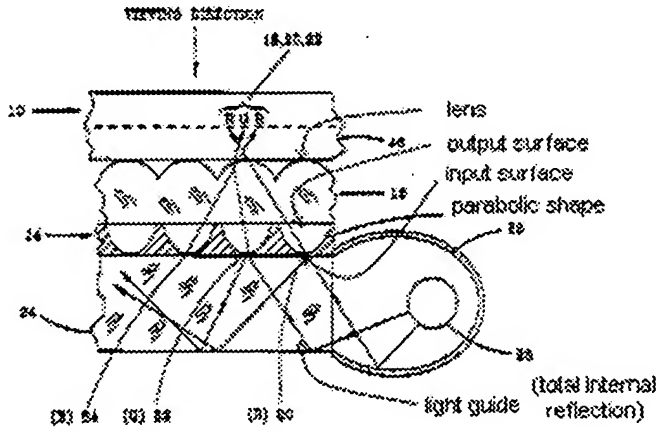
Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 4, 7, 8, 11, 12, 14-18, 32-34 & 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Ketchpel (USPN 5,396,406).

Regarding claim 1, Ketchpel discloses an array of tapered structures (e.g., 14), each the tapered structure (14) having a light input aperture (e.g., Figures 2-3) and a larger light output aperture, wherein the inner surface of each the tapered structure (14) is adapted to reflect off-axis light incident and at the input aperture to the output aperture (e.g., Figures 2-3) in which the array of tapered structures comprises an array of concentrators (e.g., column 6, lines 25-40) extending between an input aperture on an input surface and an output aperture on an output surface, each the concentrator having a generally parabolic shape (e.g., column 5, lines 13-56; "*... a second preferred embodiment where the collimator consists of clear plastic shaped with a parabolic like profile ... etc*") taken from the light input aperture to the light output aperture.



Note: claims in the pending application should be given their broadest reasonable interpretation (e.g., generally parabolic, substantially circular, substantially hexagonal, substantially rectangular ... etc). *In re Pearson*, 181 USPQ 641 (CCPA 1974). It has been held that the recitation that an element(s) is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense, *In re Hutchison*, 69 USPQ 138. The recitation a brightness enhancement film has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any

patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Regarding claim 3, Ketchpel discloses the input surface is in contact with a light guide plate, and each the concentrator has an index of refraction substantially equal to the index of refraction of the light guide plate (e.g., air, refractive index n=1, transparent material, refractive index n=1.5).

Regarding claim 4, Ketchpel discloses in a cross-section parallel to the output aperture, the tapered structure is substantially circular.

Regarding claim 7, Ketchpel discloses the off-axis light is provide by a light guide plate (e.g., Figures 2-3).

Regarding claim 8, Ketchpel discloses an array of hollow (e.g., column 5, lines 34-37; "*... the parabolic-like profile is optimized depending upon whether filled with clear plastic or air ... etc*"), reflective cavities (e.g., column 5, lines 13-23; "*the collimator groove is air filled with reflecting surface on the parabolic-like surface ... etc*") extending between a light input surface and a light output surface, in which the array comprises concentrators (e.g., column 6, lines 25-40) extending between an input aperture on an input surface and an output aperture on an output surface, each the concentrator having a generally parabolic shape (e.g., column 5, lines 13-56; "*... a second preferred embodiment where the collimator consists of clear plastic shaped with a parabolic like profile ... etc*") taken from the light input aperture to the light output aperture.

Regarding claim 11, Ketchpel discloses in a cross-section parallel to the output surface, the hollow reflective cavities are substantially circular.

Regarding claim 12, Ketchpel discloses the side-wall of at least one of the reflective cavities comprises a reflective coating (e.g., column 5, lines 13-23; "*the collimator groove is air filled with reflecting surface on the parabolic-like surface ... etc*").

Regarding claim 14, Ketchpel discloses the input surface comprises a transparent substrate (24).

Regarding claim 15, Ketchpel discloses the output surface comprises a transparent substrate (16).

Regarding claim 16, Ketchpel discloses the film comprises a reflective substrate (e.g., column 5, lines 13-23; "*the collimator groove is air filled with reflecting surface on the parabolic-like surface ... etc*").

Regarding claim 17, Ketchpel discloses each of the hollow, reflective cavity has an input aperture and an output aperture, the output aperture being larger in are than the input aperture (e.g., Figures 2-3).

Regarding claim 18, Ketchpel discloses an array of hollow (e.g., column 5, lines 34-37; "*... the parabolic-like profile is optimized depending upon whether filled with clear plastic or air ... etc*"), reflective cavities (e.g., column 5, lines 13-23; "*the collimator groove is air filled with reflecting surface on the parabolic-like surface ... etc*") extending between a light input surface and a light output surface (e.g., Figures 2-3), wherein each

the hollow reflective cavity has an input aperture for accepting indecent off-axis light (e.g., 24) and a larger output aperture wherein at least one of the hollow, reflective cavities is substantially parabolic (e.g., column 5, lines 13-56; *"... a second preferred embodiment where the collimator consists of clear plastic shaped with a parabolic like profile ... etc"*) in cross-section from the input surface to the output surface.

Regarding claim 32, Ketchpel discloses an array of concentrators extending between a light input aperture along an input surface and a light output aperture along an output surface, each the concentrator (e.g., column 6, lines 25-40) having a generally parabolic shape (e.g., column 5, lines 13-56; *"... a second preferred embodiment where the collimator consists of clear plastic shaped with a parabolic like profile ... etc"*) taken from the light input aperture to the light output aperture, wherein, for each the concentrator, the area of input aperture of the aperture is less than the area of the output aperture (e.g., Figure 2-3), the input surface is in contact with a light guide plate (24), the index of refraction is substantially equal to the index of refraction of the light guide plate (e.g., air, refractive index n=1, transparent material, refractive index n=1.5).

Regarding claim 33, Ketchpel discloses a lens (16) formed at the output aperture for at least one the concentrator.

Regarding claim 34, Ketchpel discloses total internal reflection (e.g., column 5, lines 20-30; *"... light is concentrated by total internal reflection at the parabolic-like*

surface ... etc") within each the concentrator directs a portion of off-axis light from the input aperture to the output aperture.

Regarding claim 37, Ketchpel discloses an output surface having an array of tapered concentrators (e.g., column 6, lines 25-40) including a light input aperture and a light output aperture, each concentrator having a generally parabolic shape (e.g., column 5, lines 13-56; "*... a second preferred embodiment where the collimator consists of clear plastic shaped with a parabolic like profile ... etc*") taken from a light input aperture to a light output aperture wherein the input aperture of each the concentrator is smaller than the output aperture (e.g., Figures 2-3).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 5, 6, 13 & 40-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ge et al. (USPN 5,839,812).

Regarding claims 5 & 6, Ketchpel discloses in a cross-section parallel to the output aperture, the tapered structure is substantially circular.

Ketchpel failed to teach other possible shape for the tapered structure (e.g., hexagonal & rectangular).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify shape for the tapered structure to be other than circular to increase or decrease or generally modify the brightness of the light output for the device. A change in shape is generally recognized as being within the level of ordinary skill in the art and would not solve any stated problem or is for any particular purpose, it appears that the invention would perform equally well with circularly shaped tapered structure.

Regarding claim 13, Ketchpel discloses at least two of the hollow, reflective cavities across top surface of the light transmitting light guide plate.

Ketchpel suggest and shows (e.g., Figure 4) it is beneficial to provide the light distribution to be equal through out the plate (e.g., column 4, lines 25-55; "*... a particular segmented pattern to insure even emitted light intensity across the plate of the distributor ... the pattern is fore-shortened ... to exaggerate the change in segment length for clarity ... etc*").

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify teachings of Ketchpel to actually decrease the size of the collimator groove (36) based on the distance from the light source to the plate. The following modification would have result in an alternative ways to insure an even emitted light intensity across the plate, in addition, since such a modification would have involves a mere change in size of component and a change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Regarding claims 40-42 & 44, Ketchpel discloses the structural limitations of applicant's claimed invention, explained above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recite mere claiming of a use of a particular structure, which has been clearly disclosed by the prior art reference, Ketchpel.

It has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

Response to Amendment

6. Examiner acknowledges that the applicant has amended claims 1, 3, 8, 18, 32, 37 & 40. Claims 2, 9, 10, 19 & 43 are now canceled. Currently, claims 1, 3-8, 11-18, 32-34, 37, 40-42 & 44 are pending in the application.

Affidavits, Declarations 1.132

7. The declaration under 37 CFR 1.132 filed 12/7/2005, is sufficient to overcome the rejection of claims 1-19, 32-34, 37 & 40-44 based upon Claim Rejections - 35 USC § 102 & 103.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 3-8, 11-18, 32-34, 37, 40-42 & 44 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "*each the concentrator having a generally* ***parabolic shape taken from the light input aperture to the light output aperture***") were not positively recited in the rejected claim(s). Previously, the examiner has given the term "generally parabolic" (without the parabolic shape taken from the light input to the output ... etc.) its broadest reasonable interpretation.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Holman et al. (USPN 6,871,982) – high-density illumination system

Gunn et al. (USPN 6,464,365) – light collimator for liquid crystal display

Hou et al. (USPN 5,839,823) – back-coupled illumination system with light recycling

Onishi et al. (USPN 6,425,675) – planar light source and display device using the same

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Y. Choi whose telephone number is (571) 272-2367. The examiner can normally be reached on Monday-Friday (10:00-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JC

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